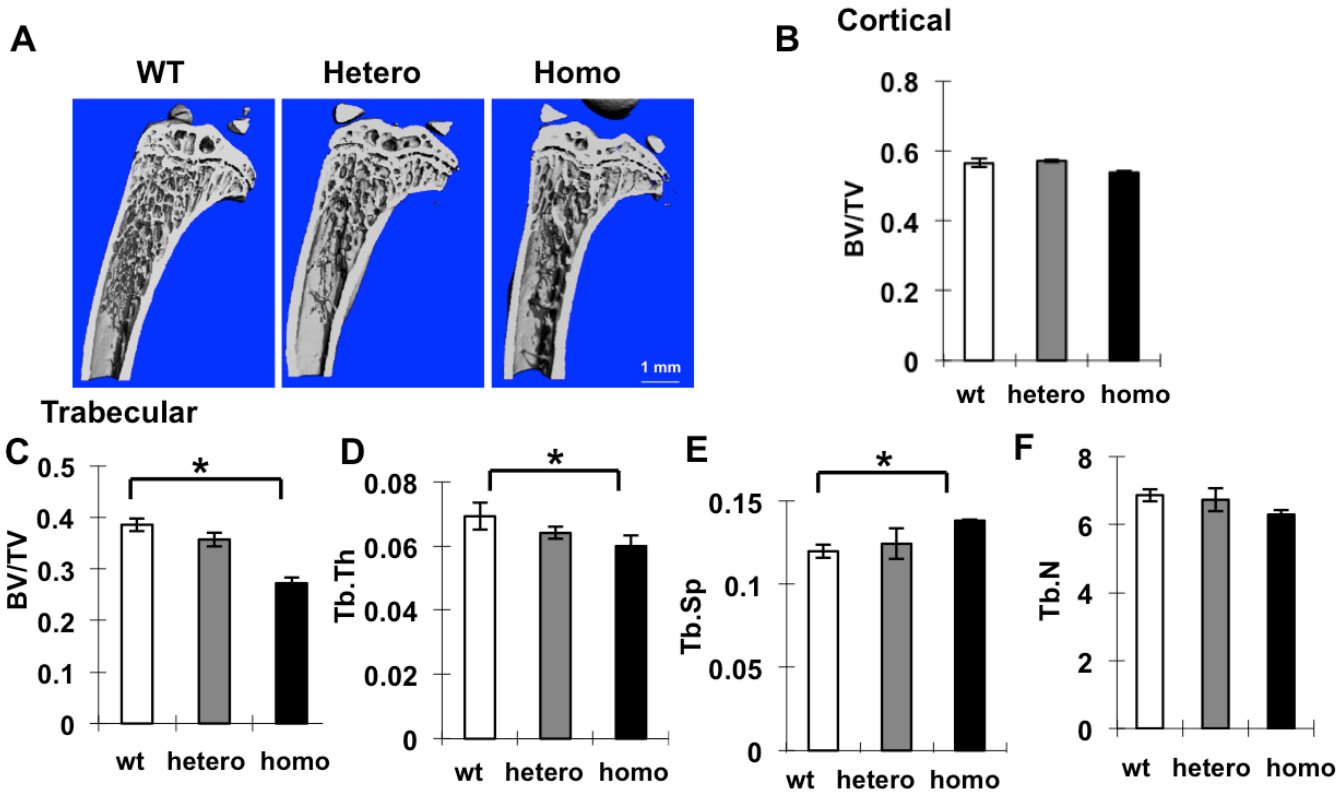
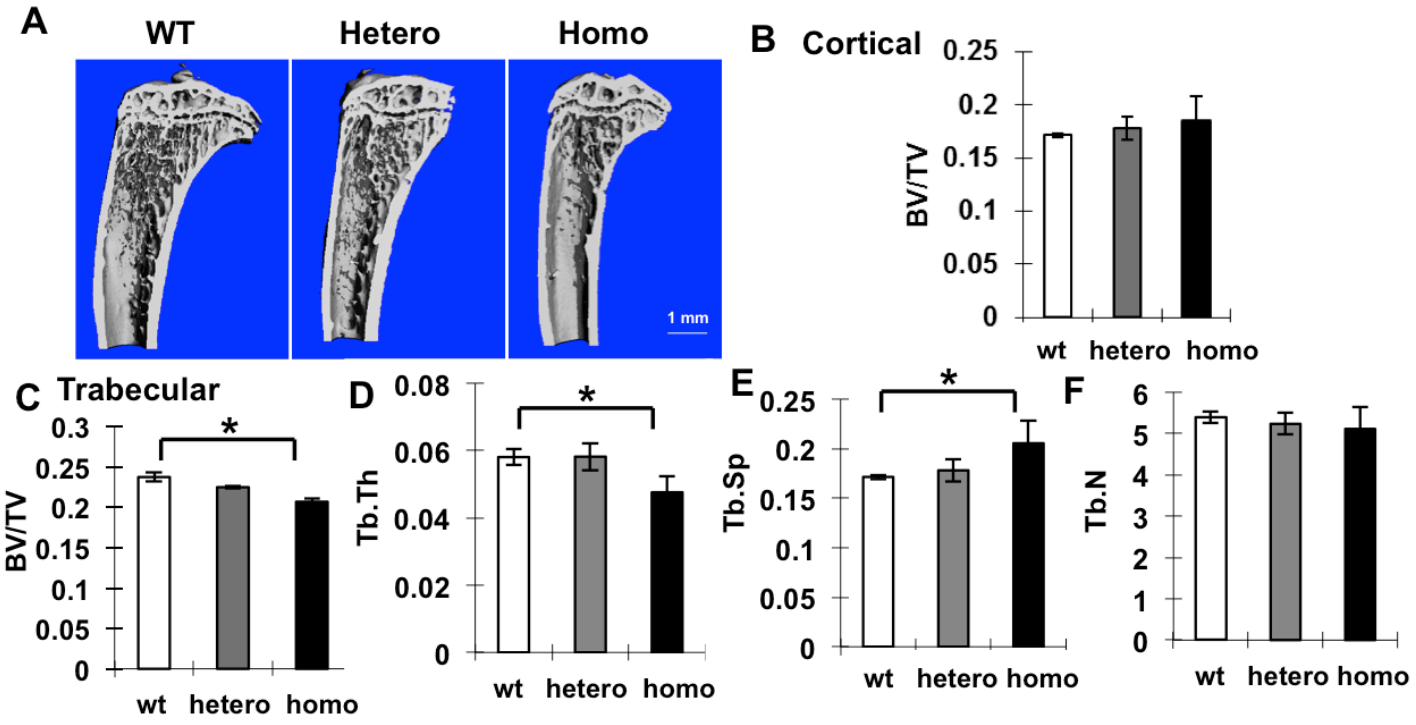
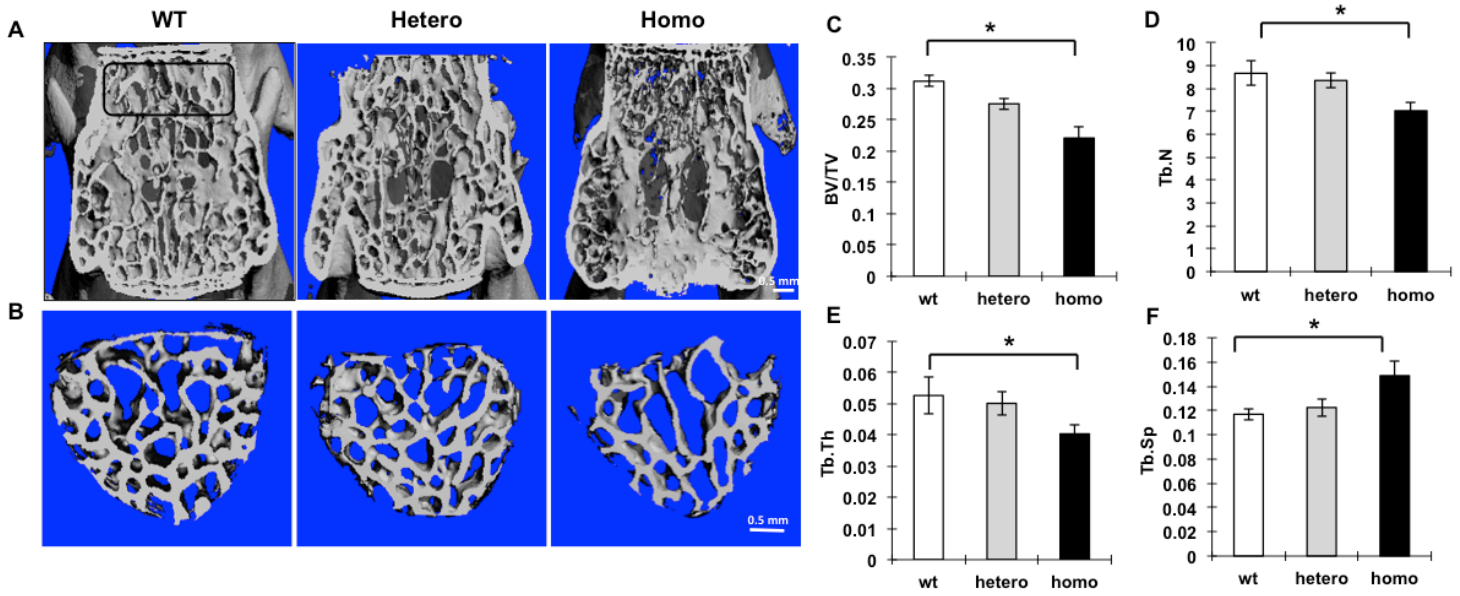
Supplementary Figures
Ge et al. Bone



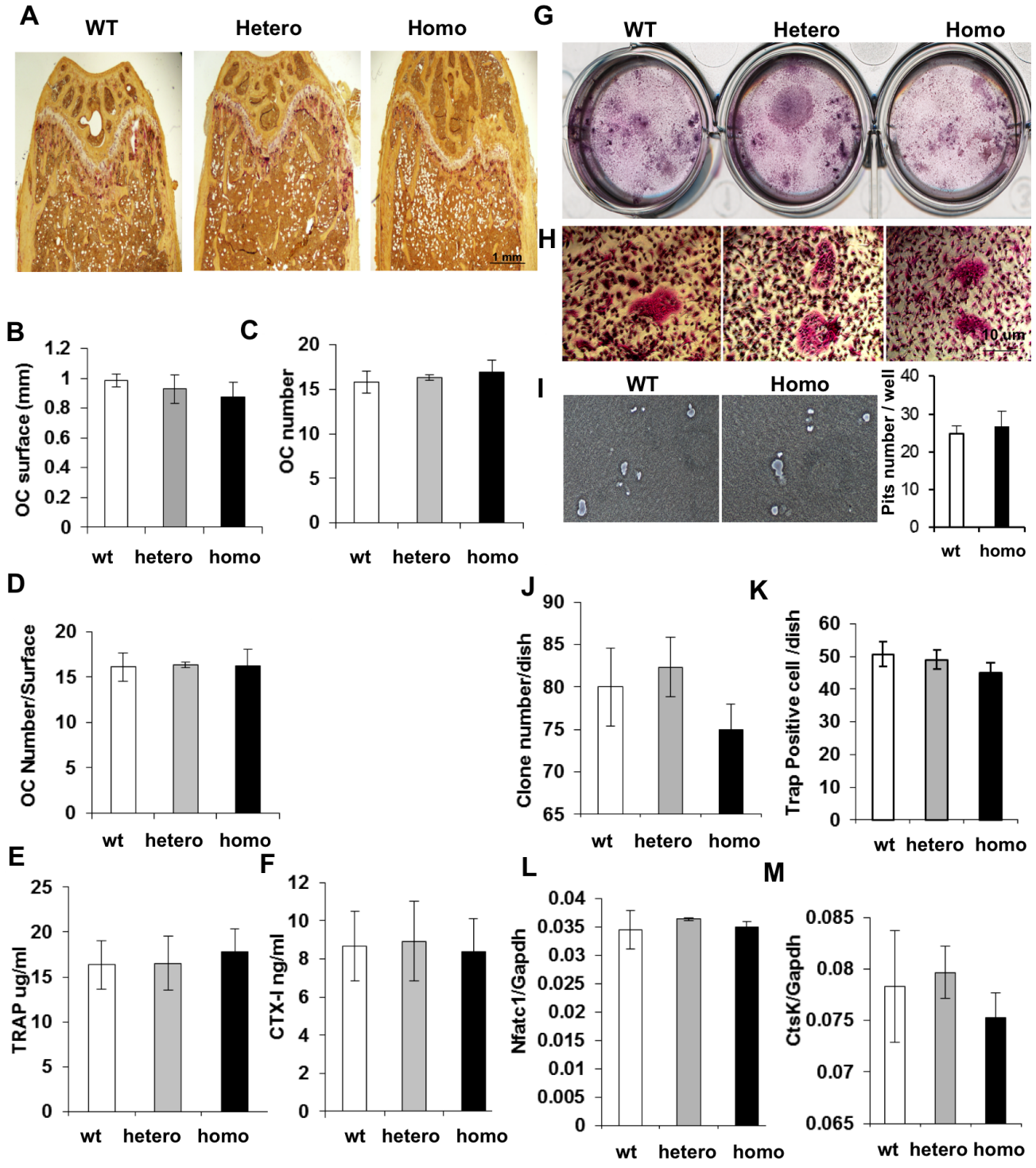
Supplementary Figure 1 Decreased tibial bone density in 3 month-old male PPARγ-S112A mice. (A) Representative micro-CT images. **(B)** Cortical Bone Volume/Tissue Volume (BV/TV). **(C-F)** Decrease of Trabecular parameters. (**C**) Bone volume/ Tissue volume (BV/TV), **(D)** Trabecular Thickness (Tb.Th), **(E)** Trabecular Spacing (Tb.Sp); **(F)** Trabecular Number (Tb.N) Statistics: * p <.01, n = 6.



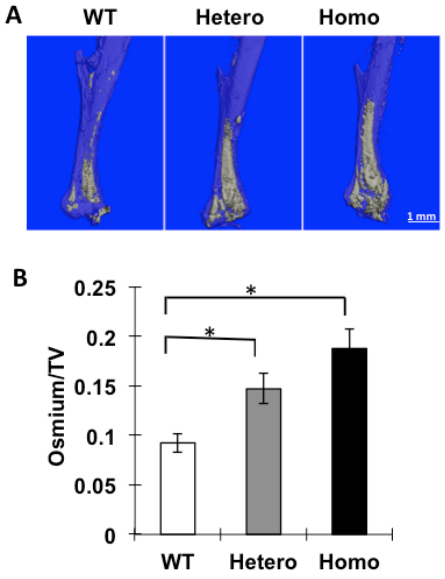
Supplementary Figure 2. Decreased tibial bone density in 5 month-old female PPARγ-S112A mice. (A) Representative micro-CT images. **(B)** Cortical Bone Volume/Tissue Volume (BV/TV). **(C-F)** Decrease of Trabecular parameters. (**C**) Bone volume/ Tissue volume (BV/TV), **(D)** Trabecular Thickness (Tb.Th), **(E)** Trabecular Spacing (Tb.Sp); **(F)** Trabecular Number (Tb.N). Statistics: * p <.01, n = 6.



Supplementary Figure 3. Decreased vertebral bone density in PPARγ-S112A mice. L3 vertebrae were isolated from 5 month-old males and trabecular parameters were determined as described in Methods. **(A,B)** MicroCT images showing overall morphology (A) and anterior trabecular section used for quantitation **(B)**. **(C-F)** Quantitation of trabecular parameters. (**C)** Bone volume/ Tissue volume (BV/TV), **(D)** Trabecular Number (Tb.N), **(E)** Trabecular Thickness (Tb.Th), **(F)** Trabecular Spacing (Tb.Sp). Statistics: * p <.01, n = 6.



Supplementary Figure 4. The PPARγ-S112A mutation does not affect osteoclast parameters or *in vitro* differentiation. Analysis was conducted using the same bones as Fig. 1. **(A-D) Osteoclast parameters: (A)** TRAP staining, **(B)** osteoclast surface, **(C)** osteoclast number, **(D)** osteoclast number/surface. **(E,F) Serum bone resorption markers: (E)** TRAP, **(F)** C-telopeptide collagen type I (CTX-I). **(G-M) *In vitro* osteoclast differentiation.** Marrow macrophages were grown under osteoclast induction conditions for 2 weeks and stained for TRAP activity **(H)** or used to measure resorptive pit formation **(I)** followed by calculation of TRAP positive clone number/dish **(J)** and TRAP positive cell number/dish **(K)**. Total RNA was also isolated for measurement of Osteoclast marker mRNAs; *Nfatc1* mRNA **(L)** and *CathpK* mRNA **(M)**. Statistics: * P <.01, n = 6.



Supplementary Figure 5. Increased marrow adipose tissue in distal tibiae. Distal portions of tibiae from Fig. 2 are shown. **(A)** Representative micro-CT images. **(B)** Quantitation of osmium staining. Statistics : * p <.01, n = 6.